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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,666	12/08/2003	Chiyoiko Sato	09792909-5745	4843
26263	7590	05/11/2006	EXAMINER	
SONNENSCHN NATH & ROSENTHAL LLP			CANNING, ANTHONY J	
P.O. BOX 061080			ART UNIT	
WACKER DRIVE STATION, SEARS TOWER			PAPER NUMBER	
CHICAGO, IL 60606-1080			2879	

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/730,666

Applicant(s)

SATO ET AL.

Examiner

Anthony J. Canning

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 8-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: English translation of J.P. 2002-318556.

## DETAILED ACTION

### *Response to Amendment*

1. The amendment and request for continued examination was entered on 5 April 2006.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi (J.P. 2002-318556) (of record).
4. As to claim 1, Kobayashi discloses a display apparatus including: a plurality of lower electrodes patterned on a substrate (see Drawing 3, items 101 and 117; Detailed Description paragraph 0016) on the basis of each pixel (see Drawing 3); an auxiliary wiring disposed between adjacent lower electrodes at the same level as the lower electrodes (see Drawing 3, item 118; Detailed Description paragraph 0018) and insulated from the lower electrodes (see Drawing 3, item 120; Detailed Description paragraph 0018); an insulating film formed on the substrate (see Drawing 3, item 120; Detailed Description paragraph 0018) and connection holes reaching the auxiliary wiring (see Drawing 3, the spaces between item 120 are the connection holes); an organic layer patterned in the state of covering bottom portions of the pixel openings (see Drawing 3, the layer between items 117 and 122; Detailed Description paragraph 0016); and an

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upper electrode covering the organic layer and connected to the auxiliary wiring through one of the connection holes in each pixel (see Drawing 3, item 122; Detailed Description paragraph 0016; the regions containing the organic material are the organic regions).

5. As to claim 2, Kobayashi discloses a display apparatus as set forth in claim 1. Kobayashi further discloses that the substrate includes an inter-layer insulating film covering a thin film transistor substrate provided with thin film transistors for driving the pixels (see Drawing 3, items 116 and 104-106; Detailed Description paragraph 0037), and each of the lower electrodes is connected to each of the thin film transistors through a connection hole formed in the inter-layer insulating film (see Drawing 3, items 117 and 104-106; (Detailed Description paragraph 0028).

6. As to claim 6, Kobayashi discloses a display apparatus as set forth in claim 1. Kobayashi further discloses the upper electrode is light-transmitting (see Drawing 3, item 122; paragraph 0017).

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 2 and 6 rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al. (U.S. 6,900,470 B2).

9. As to claim 1, Kobayashi et al. disclose a display apparatus comprising: a plurality of lower electrodes patterned on a substrate in pixels (see Fig. 3, items 101 and 117; column 4, lines 24-28); an auxiliary wiring disposed between adjacent lower electrodes at the same level as the lower electrodes and insulated from the lower electrodes (see Fig. 3, items 118 and 120; column 8, lines 43-53); an insulating film formed on the substrate (see Fig. 3, item 120; column 10, lines 7-15), the insulating film having pixel openings for exposing central portions of the lower electrodes and connection holes reaching the auxiliary wiring (see Fig. 3, items 120a and 121; column 8, lines 43-53); an organic layer covering bottom portions of the pixel openings (see Fig. 3, items 121; column 8, lines 54-64); and an upper electrode covering the organic layer and connected to the auxiliary wiring through one of the connection holes in each pixel (see Fig. 3, items 118 and 122; column 10, lines 7-14).

10. As to claim 2, Kobayashi et al. disclose a display apparatus as set forth in claim 1. Kobayashi et al. further disclose that the substrate includes an inter-layer insulating film covering a thin film transistor substrate provided with thin film transistors for driving said pixels (see Fig. 3, items 113, 114 and 116; column 8, lines 19-29), and each of said lower electrodes is connected to each of said thin film transistors through a connection hole formed in said inter-layer insulating film (see Fig. 3, item 117; the portion of 117 that penetrates item 116).

11. As to claim 6, Kobayashi et al. disclose a display apparatus as set forth in claim 1. Kobayashi et al. further disclose that the upper electrode is light-transmitting (see Fig. 3, item 122; column 9, lines 25-34).

*Claim Rejections - 35 USC § 103*

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (J.P. 2002-318556) (of record) in view of Sakaguchi et al. (U.S. 6,366,016 B1).

14. As to claim 3, Kobayashi discloses a display apparatus wherein the organic layer is patterned in the state of covering the bottom portions of the pixel openings (see Drawing 3, the layer between items 117 and 122). The upper electrode is connected to the auxiliary wiring through the connection holes between portions of the organic layer (see Drawing 3, items 122 and 118; paragraph 0018). Kobayashi fails to disclose having end portions partly overlapping themselves.

Sakaguchi et al. disclose an organic electroluminescent display wherein the end portions of the organic layer each other (see Fig. 8a, items 4 and 26; column 5, lines 31-33). Sakaguchi et

al. further disclose that this keeps the end portions of the organic electroluminescent layer in each pixel from being exposed (column 5, lines 25-8).

Therefore, it would have been obvious to one having ordinary skill in the art. at the time the invention was made, to modify the organic electroluminescent display of Kobayashi to include having end portions of the organic layer partly overlapping on each other between the adjacent pixels, as taught by Sakaguchi et al., to keep the end portions of the organic electroluminescent layer from being exposed.

15. Claims 4, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (J.P. 2002-318556) (of record) in view of Sakaguchi et al. (U.S. 6,366,016 B1) and in further view of Hosokawa et al. (U.S. 6,280,861 B1).

16. As to claims 4, 5 and 7, Kobayashi and Sakaguchi et al. disclose a display apparatus as set forth in claim 3. Kobayashi and Sakaguchi et al. fail to disclose that the lower electrodes have a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers.

Hosokawa et al. disclose that an electrode that has a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers (column 5, lines 6-15; the metal layer is reflective because it's transmittance is between 60-90%, a portion of the light is reflected by the metal layer; which can be multiple layers). Hosokawa et al. further disclose that this arrangement increases surface flatness of the electrode, which helps to prevent a short circuit of the device (column 6, lines 6-14).



Therefore, it would have been obvious to one having ordinary skill in the art. at the time the invention was made, to modify the organic electroluminescent display of Kobayashi to include that the lower electrodes have a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers, as taught by Hosokawa et al., to prevent a short circuit.

17. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (U.S. 6,900,470 B2) in view of Sakaguchi et al. (U.S. 6,366,016 B1).

18. As to claim 3, Kobayashi et al. discloses a display apparatus wherein the organic layer is patterned in the state of covering the bottom portions of the pixel openings (see Fig. 3, item 121 and P; column 8, lines 54-64), and the upper electrode covers the organic layer and is connected to the auxiliary wiring through the connection holes between portions of the organic layer (see Fig. 3, items 118, 121 and 122; column 10, lines 7-14). Kobayashi et al. fail to disclose that the end portions of the organic layer partly overlap themselves.

Sakaguchi et al. disclose an organic electroluminescent display wherein the end portions of the organic layer each other (see Fig. 8a, items 4 and 26; column 5, lines 31-33). Sakaguchi et al. further disclose that this keeps the end portions of the organic electroluminescent layer in each pixel from being exposed (column 5, lines 25-8), which can lead to erosion of the end portions and degradation of the organic layer.

Therefore, it would have been obvious to one having ordinary skill in the art. at the time the invention was made, to modify the display device of Kobayashi et al. to include that the end portions of the organic layer partly overlap themselves, as taught by Sakaguchi et al., to prevent

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the end portions of the organic layer from being exposed, which can lead to erosion of the end portions and degradation of the organic layer.

19. Claims 4, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (U.S. 6,900,470 B2) in view of Sakaguchi et al. (U.S. 6,366,016 B1) and in further view of Hosokawa et al. (U.S. 6,280,861 B1).

20. As to claims 4, 5 and 7, Kobayashi et al. and Sakaguchi et al. disclose a display apparatus as set forth in claim 3. Kobayashi et al. and Sakaguchi et al. fail to disclose that the lower electrodes have a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers.

Hosokawa et al. disclose that an electrode that has a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers (column 5, lines 6-15; the metal layer is reflective because its transmittance is between 60-90%, a portion of the light is reflected by the metal layer; which can be multiple layers). Hosokawa et al. further disclose that this arrangement increases surface flatness of the electrode, which helps to prevent a short circuit of the device (column 6, lines 6-14).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the organic electroluminescent display of Kobayashi et al. to include that the lower electrodes have a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers, as taught by Hosokawa et al., to prevent a short circuit.

*Response to Arguments*


21. The examiner acknowledges the amendment to claim 1.
22. The current amendment to claim 1 overcomes the prior rejection; consequently, a new rejection has been presented above.


*Contact Information*

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Canning   
1 May 2006

  
**ASHOK PATEL**  
**PRIMARY EXAMINER**